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Meeker et al.

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[54] **QUICK OPENING ENVELOPE**

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Related U.S. Application Data

[63] Continuation of Ser. No. 353,176, Mar. 1, 1982, abandoned.

[51] **Int. Cl.**[3] **B65D 27/34**; B65D 27/36

[52] **U.S. Cl.** **206/610**; 206/628

[58] **Field of Search** 206/610, 620, 628, 632

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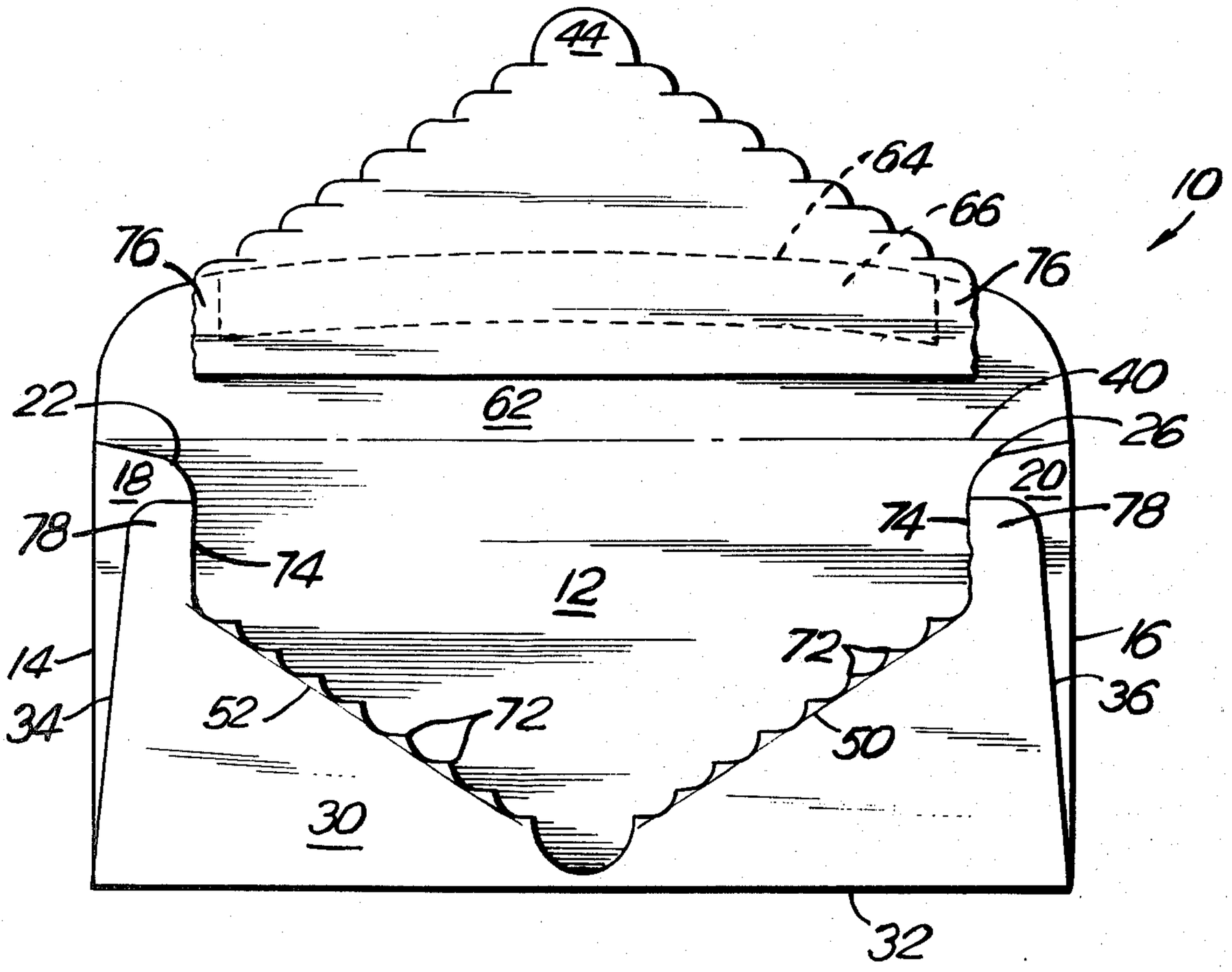
[57] **ABSTRACT**

A quick opening envelope which gives full access to its interior upon opening is disclosed. The envelope is formed from a blank constructed from a single sheet of flexible material having a plurality of fold lines defining a front panel, a back panel, two side flaps and a closure flap. The back panel is provided with a V-shaped array of die cut perforations, each of which includes an arc portion and a tangent portion. The V-shaped array of perforations enables neat and easy opening of the envelope.

1 Claim, 4 Drawing Figures



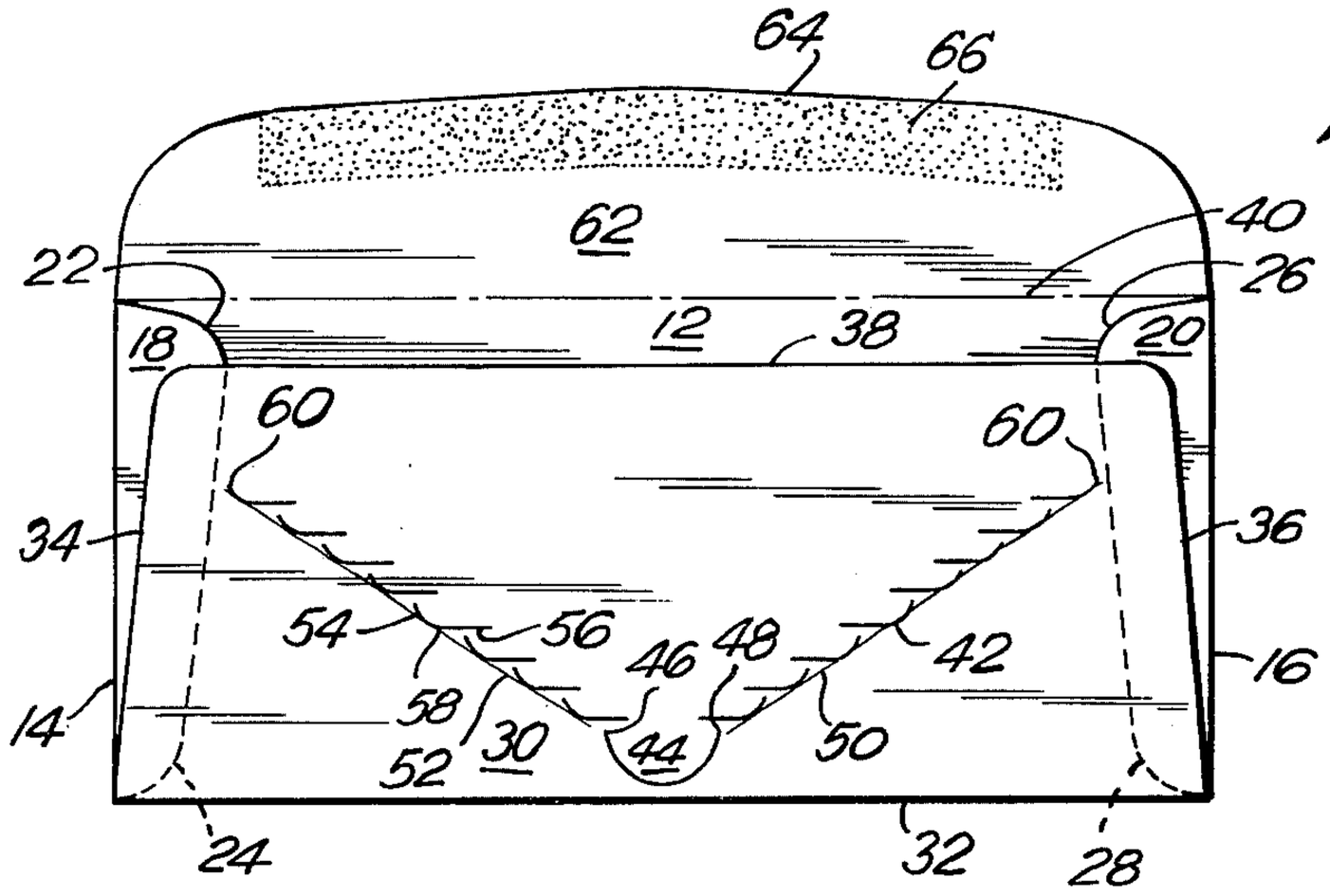

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FIG. 1

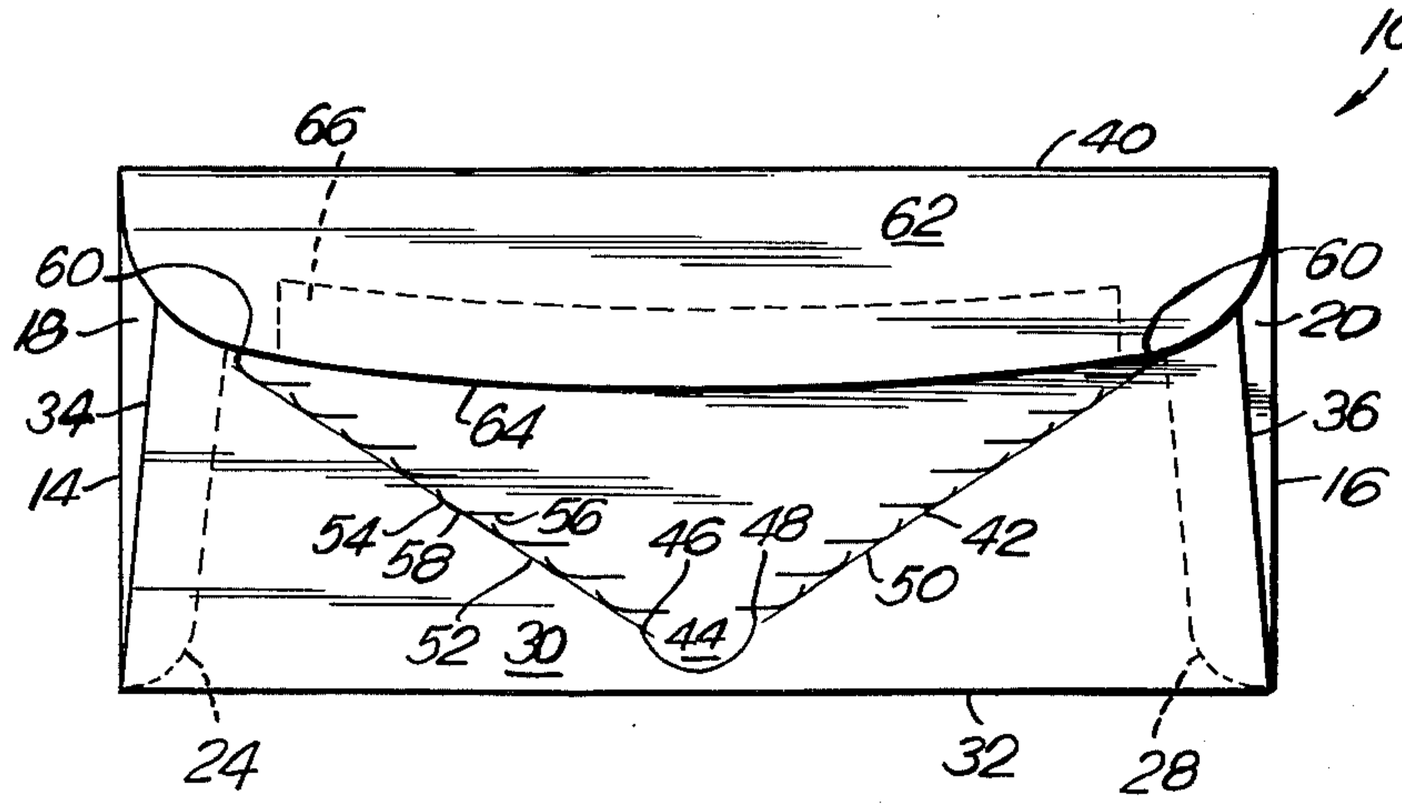
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FIG. 2

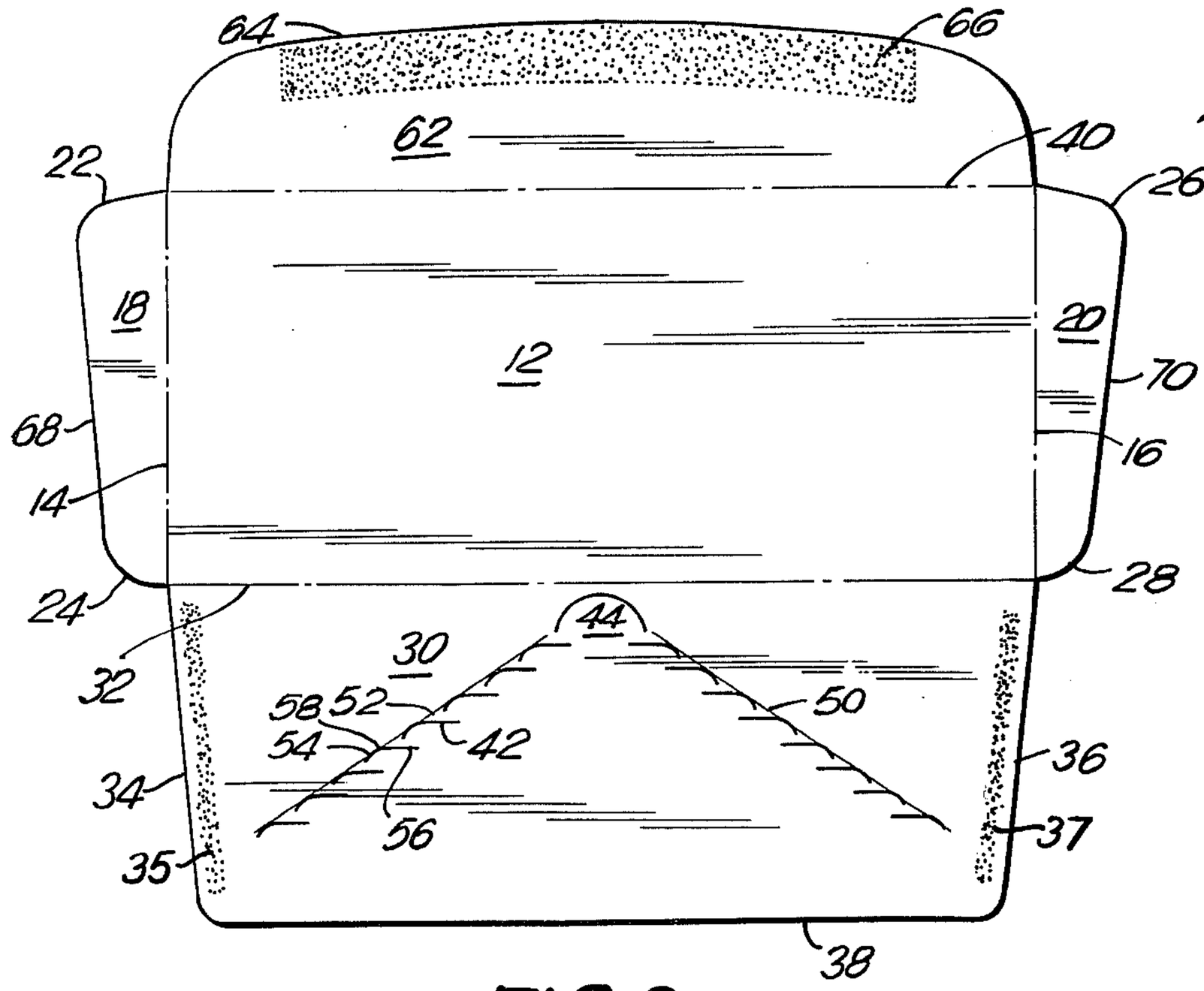
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FIG.3

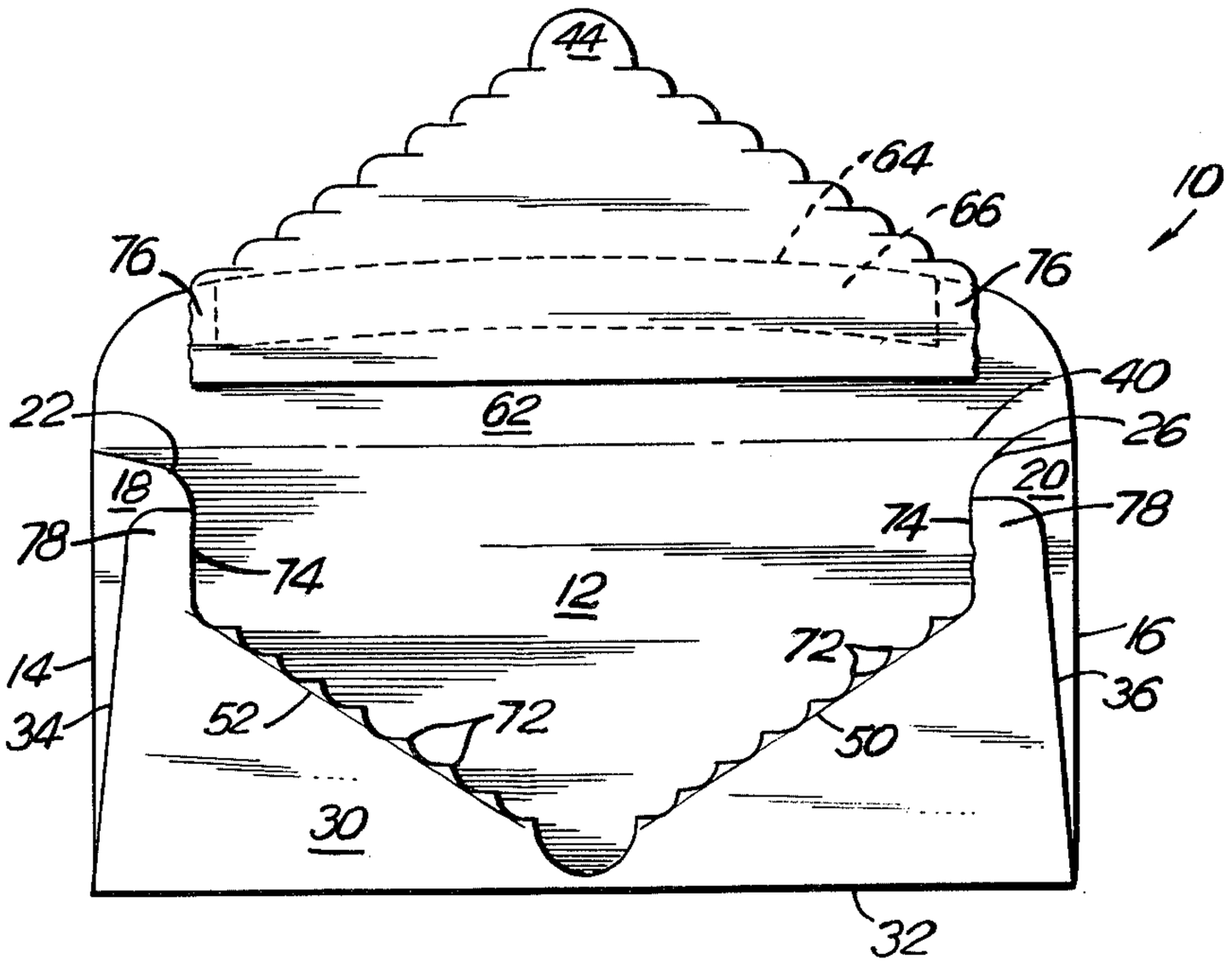
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FIG.4

QUICK OPENING ENVELOPE

This application is a continuation of application Ser. No. 353,176, filed Mar. 1, 1982, now abandoned.

BACKGROUND OF THE INVENTION

This invention relates to envelopes. More particularly, it relates to quick opening envelopes which provide for easy and full access to their interior for the safe withdrawal of their contents.

It is well known that the usual method of opening an envelope after the latter has been sealed entails the insertion of a letter opener or like instrument at one corner of the envelope to shear at least one folded edge portion thereof. Although this method proves satisfactory in most instances, it has a number of substantial drawbacks. The main drawback is that in many instances the individual opening the envelope, in addition to shearing the folded edge of the envelope, will inadvertently shear a folded edge of the document contained therein.

Moreover, once an envelope has been opened in the above manner, it is impossible to reclose it so as to assure that its contents if returned to the envelope, will not fall out. In this respect, envelopes are often opened by simply tearing the glued flap portion away from the body of the envelope. Although this saves the problem of reclosure, it often results in the tearing of the envelope, thereby leaving a ragged unsightly condition.

Other procedures used for opening envelopes include tearing the side edge portion, however, this has also proved unsatisfactory since, if the enclosed letter fills the envelope flush to the end, which in most instances is the case, the contents of the envelope may be mutilated.

In order to overcome the above-identified drawbacks, a number of quick opening envelopes have been developed. Although these envelopes have overcome many of the problems associated with prior art techniques, they are in many cases unsightly, require special handling during manufacturing, are expensive to make and therefore expensive to use, and do not provide full access to the interior of the envelope when opened.

Accordingly, it is an object of the subject invention to provide a quick opening envelope that can be opened easily and cleanly without separate tools and without the risk of damaging the contents of the envelope.

It is another object of the subject invention to provide a quick opening envelope which when opened, will give full access to the contents of the envelope.

It is a further object of the subject invention to provide a quick opening envelope that can be neatly and partially reclosed.

It is still another object of the subject invention to provide a quick opening envelope wherein the opening mechanism does not interfere with the portion of the envelope on which the name and address of the addressee appears.

Finally, it is still another object of the subject invention to provide a quick opening envelope which can be economically produced with a minimum amount of material and which can be constructed from a single integrally formed blank.

SUMMARY OF THE INVENTION

In accordance with this invention, an improved quickopening envelope has been provided. The subject quick opening envelope is constructed from a single sheet of foldable material comprising five panels or

flaps. More specifically, a substantially rectangular front panel is provided for bearing the name and address of the addressee. Side flaps are hingedly attached to opposite side edges of the front panel and define the enclosed end portions of the subject envelope. A back panel is hingedly attached to the bottom edge of the front panel, and is folded over and adhesively attached to the side flaps. The back panel includes a plurality of arcuate perforations arranged in a V formation, with the apex of the V nearest the hinged connection between the front and back panels. The arcuate perforation at the apex of the V defines a pull tab which can be readily grasped by a thumb and forefinger. A closure flap is hingedly connected to the top edge of the front panel and can be adhesively secured to the back panel thereby closing the subject envelope. A force exerted on the pull tab enables a separation of the back panel along the perforations to easily and cleanly open the subject quick opening envelope.

This design provides an envelope that can be securely closed, but that can be quickly and easily opened. Additionally, the design enables the subject envelope to be partially and neatly reclosed.

Further objects and advantages of the invention will become apparent from reading the following detailed description taken in conjunction with the drawings.

DESCRITPION OF THE DRAWINGS

FIG. **1** is a plan view of the subject envelope viewed from the back with the closure flap in the open position.

FIG. **2** is a plan view of the subject envelope viewed from the back with the closure flap in the closed position.

FIG. **3** is a plan view of the blank for forming the subject envelope.

FIG. **4** is a plan view of the subject envelope viewed from the back with the back panel entirely separated along the perforations.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. **1**, the quick opening envelope of the subject invention is indicated generally as number **10**. Envelope **10** includes a substantially rectangular front panel **12** that is approximately 8 $\frac{7}{8}$ inches long and 3 $\frac{7}{8}$ inches high. Hingedly connected to opposite side ends **14** and **16** of front panel **12** are side flaps **18** and **20**. Side flaps **18** and **20** lay flat against the inside surface of front panel **12**. Corners **22** and **24** on side flap **18** and corners **26** and **28** on side flap **20** are rounded to facilitate the formation of the subject envelope, and to make insertion of items into the folded envelope easier.

Back panel **30** is hingedly connected to bottom edge **32** of front panel **12** and is further defined by its side edges **34** and **36** and top edge **38**. The portions of back panel **30** adjacent side edges **34** and **36** thereof are in surface to surface contact with side flaps **18** and **20** respectively. The remainder of back panel **30** is in surface to surface contact with front panel **12**. Back panel **30** has a trapezoidal configuration such that edges **32** and **38** are parallel. Side edges **34** and **36** of back panel **30** taper toward one another as they extend from bottom edge **32** toward top edge **38**. This trapezoidal configuration of back panel **30** ensures that sides edges **34** and **36** of back panel **30** will not extend beyond side edges **14** and **16** of front panel **12** when back panel **30** is flush against front panel **12** and side flaps **18** and **20**.

Back panel **30** is adhesively secured to side flaps **18** and **20**.

The distance between bottom edge **32** and top edge **38** of back panel **30** is approximately three and one-fourth inches. Thus, as shown in FIG. **1**, there is slightly more than one-half inch between top edge **38** of back panel **30** and top edge **40** of front panel **12**. This space between top edges **38** and **40** of back panel **30** and front panel **12** respectively facilitates insertion of items into the envelope.

Centrally disposed on back panel **30** is a V-shaped formation defined by a plurality of arcuate die cut perforations **42**. The vertex of the V formation is defined by a die cut semi-circular tab **44** disposed convex side downward approximately one-eighth inch above bottom edge **32** of back panel **30**. The radius of tab **44** is approximately one-half inch.

The V formation is defined by two rows of eight perforations **42** extending angularly upward toward top edge **38** of back panel **30** from the topmost points **46** and **48** of tab **44**. As with tab **44**, each arcuate perforation **42** has its covex side disposed in a generally downward direction. The eight arcuate perforations **42** closest to side edge **36** of back panel **30** are arranged to have a common tangent, indicated by line **50**, that intersects uppermost point **48** of tab **44**. Similarly, the eight arcuate perforations closest to side edge **34** of back panel **30** are arranged to have a common tangent, indicated by line **52**, that intersects uppermost point **46** on tab **44**. The angle between bottom edge **32** of back panel **30** and either tangent **50** or **52** is approximately 33°.

Each arcuate perforation **42** comprises an arc portion **54** having a radius of approximately one-quarter inch, and a tangent portion **56** approximately one-quarter inch long. Each tangent portion **56** of arcuate perforations **42** extends parallel to bottom edge **32** of back panel **30**. Furthermore, each tangent protion **56** of arcuate perforations **42** extends from the point **58** where each arc portion **54** of arcuate perforations **42** is closest to bottom edge **32** of back panel **30**. More specifically, each tangent **56** extends from its respective point **58** on arcuate perforation **42** toward the central portion of back panel **30**. A tangent to arc portion **54** of arcuate perforation **42** at the upper point **60** thereon would intersect bottom edge **32** of back panel **30** at an angle of approximately 72°. Approximately one-sixteenth inch separates adjacent arcuate perforations **42**. Additionally, uppermost points **46** and **48** on tab **44** are also approximately one-sixteenth inch from the respective arcuate perforations **42** closest thereto. The small separation between perforations combined with the angular relationship described above virtually assures a neat severance, and precludes inadvertent ripping of back panel **30**.

Ends **60** of the two arcuate perforations **42** closest to top edge **38** of back panel **30** are separated from one another by approximately seven inches. This distance is slightly less than the distance between side flaps **18** and **20** at the points thereon that are intersected by top edge **38** of back panel **30**. This relationship between side flaps **18** and **20** and the two perforations **42** that are closest to edge **38** of back panel **30** substantially facilitates the opening of envelope **10**, as explained below.

Closure flap **62** is hingedly connected to top edge **40** of front panel **12**. Centrally disposed along edge **64** of closure flap **62** is adhesive strip **66**, which is approximately six and one-half inches long and one-half inch wide. The distance between edges **40** and **64** of closure flap **62** is great enough to enable adhesive strip **66** to extend beyond edge **38** of back panel **30** when closure flap **62** is in the closed position shown in FIG. **2**. Returning to FIG. **1**, adhesive strip **66** typically is a glue that becomes bondable upon contact with moisture. However, in certain applications, a pressure sensitive adhesive may be used. The length and width of adhesive strip **66** is such that it will contact only back panel **30**; and more specifically, only that portion of back panel **30** between ends **60** of the arcuate perforations **42** closest to edge **38** of back panel **30**. As explained below, this arrangement greatly facilitates the opening of envelope **10**.

The blank **10** for forming the subject envelope is shown in FIG. **3**. Specifically, the surface of blank **10** shown in FIG. **3** defines the inside surfaces of the subject envelope.

Front panel **12** of blank **10** is substantially rectangular and is defined by opposed side edges **14** and **16**, bottom edge **32** and top edge **40**. Hingedly attached to front panel **12** at opposed side edges **14** and **16** respectively are side flaps **18** and **20**. Side flap **18** is defined by rounded corners **22** and **24** which extend between edges **14** and **68**. The radius of rounded corner **22** is greater than the radius of rounded corner **24**. As a result, edge **68** is disposed at an angle to hinged connection **14** between side flap **18** and front panel **12**. Similarly, side flap **20** is defined by rounded corners **26** and **28** which extend between fold line **16** and edge **70**. Rounded corner **26** has a larger radius than rounded corner **28**. As a result, edge **70** is disposed at an angle to fold line **16**. This relationship between the respective edges of side flaps **18** and **20** facilitates the application of adhesive to secure back panel **30** to side flap **18**, as explained below.

Back panel **30** is hingedly connected to front panel **12** along fold line **32**. Back panel **30** is substantially trapezoidal with edge **38** being susbtantially parallel to, but shorter than fold line **32**. Edge **34** of back panel **30** is parallel to edge **68** of side flap **18**. Similarly, edge **36** of back panel **30** is parallel to edge **70** of side flap **20**. By this arrangement, the edges of back panel **30** and side flaps **18** and **20** will be parallel on the folded envelope. Adhesive strips **35** and **37** are adjacent edges **34** and **36** respectively and are attached to side flaps **18** and **20** on the completed envelope.

Arcuate perforations **42** are arranged in an essentially V-shaped formation, with eight arcuate perforations **42** in each leg of the V. The apex of the V-formation is defined by semi-circular die cut perforation **44** which has its convex side facing fold line **32**, and spaced approximately one-eighth inch therefrom. As explained in greater detail above, each arcuate perforation **42** includes a circular arc portion **54** and a tangent portion **56**. Tangent portions **56** are parallel to one another and to fold line **32**. Approximately one-sixteenth inch separates adjacent perforations, and approximately seven inches separates end points **60** on the perforations **42** closest to edge **38** of back panel **30**.

Closure flap **62** is hingedly connected to front panel **12** along fold line **40**. Adhesive strip **66** is adjacent to and centrally located on edge **64** of closure flap **62**. As stated previously, adhesive strip **66** is approximately six and one-half inches long and one-half inch wide. This configuration ensures that one the completed envelope closure flap **64** will be adhered only to back panel **30**.

The subject envelope **10** is formed from the blank described herein by first folding end flaps **18** and **20** toward each other along fold lines **14** and **16** respec-

tively such that end flaps **18** and **20** are in surface to surface contacting relationship with front panel **12**. Subsequently, back panel **30** is folded into surface to surface contacting relationship with side panels **18** and **20** and front panel **12**. Adhesive strips **35** and **37** on back panel **30** are secured to side flaps **18** and **20** respectively thereby securing the blank into the form of an envelope. Closure flap **62** may be folded along fold line **40** incto face to face contacting relationship with back panel **30**, front panel **12** and side flaps **18** and **20**. Closure flap **62**, of course, would not be adhesively secured to back panel **30** during shipping and storage prior to use. However, after insertion of the item to be mailed into envelope **10**, closure flap **62** would be adhesively secured to back panel **30** by means of adhesive strip **66**.

The quick opening features of the subject envelope would be initiated when the envelope **10** is in the closed position as shown in FIG. **2**. To employ the quick opening feature, the user of the envelope grasps tab **44** with a thumb and forefinger. The semi-circular shape and relatively large size of tab **44** and the proximity of tab **44** to bottom edge **32** of envelope **10** facilitates the grasping of tab **44**. To even further facilitate the initial grasping of tab **44**, the user merely bends envelope **10** slightly causing the plane thereof to become discontinuous, and causing tab **44** to separate slightly from back panel **30**.

After initially grasping tab **44**, the user of envelope **10** pulls tab **44** away from the plane defined by back panel **30**, and toward top edge **40** of envelope **10**. This pulling force successively tears back panel **30** of envelope **10** between adjacent arcuate perforations. As shown in FIG. **4**, the severance lines **72** formed by this pulling will be substantially parallel to the direction of the force exerted on tab **44**. Thus, the severance lines **72** between adjacent perforations **42** will be substantially perpendicular to top and bottom edges **32** and **40** of envelope **10**. In most instances, pairs of severance lines **72** will be formed simultaneously on opposite legs of the V formation. The tangential portions **56** of arcuate perforations **42** function as temporary and varying fold lines as tab **44** is being pulled from back panel **30**. Tangential portions **56** also ensure that a force exerted on tab **44** that is not precisely perpendicular to top and bottom edge **32** and **40** of envelope **10** will not unintentionally rip the portion of back panel **30** that is being lifted. This tendency of the lifted portion of back panel **30** not to tear, can be attributed to the differential twisting thereof that is enabled by tangential portions **56** of arcuate perforations **42**.

As explained above, closure flap **62** is adhered only to the portion of back panel **30** between ends **20** of the arcuate perforations **42** closest to edge **38** of back panel **30**. Thus, as the last perforations **42** are being severed by the lifting force on tab **44**, closure flap **62** also will be lifted upwardly. The severance lines **74** between edge **38** of back panel **30** and the uppermost points **60** on arcuate perforations **42** closest to edge **38** will be approximately three-fourths of an inch long, which is substantially longer than severance lines **72**. These longer severance lines **74**, however, will be relatively straight and clean because the portions of back panel **30** on either side of the longer severance lines are firmly adhered to respective parts of envelope **10** that are moving relative to one another. Specifically, portions **76** of back panel **30** adjacent severance line **72** are adhered to closure flap **62**, which as mentioned above, is being lifted upwardly. However, portions **78** of back panel **30** adjacent to severance lines **72** are firmly adhered to side flaps **18** and **20** which are not being lifted upwardly. By this arrangement, a neat clean opening of envelope **10** is provided, along severance lines **74** on back panel **30**.

After being opened, as shown in FIG. **4**, envelope **10** may be partially reclosed merely by folding closure flap **62** back towards its original position. The individual severances **72** between perforations **42** will not be precisely perpendicular to the plane of back panel **30**. Rather, individual severances **72** will define an angle across the thickness of the material from which envelope **10** is made. As a result, there will be some overlapping at each severance **72**. Due to this small amount of overlapping, the portion of back panel **30** that has been lifted, may be slid under the stationary portions of back panel **30** at the severances **72**. This minor frictional engagement generally will be sufficient to hold envelope **10** in a partially closed condition.

Accordingly, there is provided a quick opening envelope comprising a front panel, two side flaps foldably connected to opposite side edges of the front panel, a back panel foldably connected to the bottom edge of the front panel, and a closure flap foldably connected to the top edge of the front panel. The back panel includes a plurality of arcuate die cut perforations arranged thereon in a generally V-shape. The apex of the V defines a semi-circular tab that is easily graspable. An upward force exerted on the tab will sever the back panel between adjacent perforations thereby providing quick and easy access to the contents of the envelope. More specifically, the relationship between the perforations, the side flaps and the adhesive strip on the closure flap enables the closure flap to be opened along with the severed back panel.

The subject invention, and many of its intended advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form of the subject quick opening envelope without departing from the spirit and scope of the invention as defined by the following claims.

What is claimed is:

1. A quick opening paper envelope comprising:

(a) substantially rectangular planar front panel having opposed inner and outer surfaces, a top edge, a bottom edge, and first and second opposed side edges;

(b) first and second substantially identical side flaps hingedly connected respectively to said first and second side edges of said front panel, said first and second side flaps each having an inner and an outer surface, the inner surfaces of said first and second side flaps abutting the inner surface of said front panel;

(c) a back panel having opposed inner and outer surfaces, a bottom edge, a top edge, and first and second opposed side edges, the bottom edge of said back panel being hingedly connected to the bottom edge of said front panel, the inner surface of said back panel being adhesively attached to the outer surfaces of said first and second side flaps respectively, said back panel including a two-legged V-shaped array of arcuate die cut perforations, the vertex of said V-shaped array of arcuate die cut perforations converging toward the bottom edge of said back panel, each said arcuate die cut perforation having its convex side generally facing the bottom edge of said back panel, the vertex of said V-shaped array of arcuate die cut perforations

being defined by a semi-circular perforation which defines a pull tab for opening said quick opening envelope, each of said arcuate die cut perforations extending from said pull tab comprising an arcuate portion and a tangent portion, each of said tangent portions extending parallel to the bottom edge of said back panel and away from the nearest side edge of said back panel and away from the location on its associated arc portion closest to the bottom edge of said back panel, the arcuate portion of each arcuate die cut perforation in one leg of said V-shaped array being tangent to a first imaginary straight line extending upwardly at an acute angle from said semi-circular perforation toward a first upper corner of said envelope, and the arcuate portion of each arcuate die cut perforation in the other leg fo said V-shaped array being tangent to a second imaginaty straight line extending upwardly at an acute angle from said semi-circular perforation toward a second upper corner of said envelope; and

(d) a closure flap having opposed inner and outer surfaces, a top edge and at least one sealing edge, said top edge of said closure flap being hingedly connected to the top edge of said front panel, an adhesive area disposed on the inner surface of said closure flap adjacent said sealing edge, the length of said adhesive area as measured parallel to the top edge of said closure flap being less than the distance between the arcuate perforations on said back panel most distant from the pull tab thereon, the distance from said top edge of said closure flap to the adhesive area on said closure flap being such that said closure flap may be adhesively secured to the outer surface of said back panel thereby closing said envelope.

* * * * *